

Equipment Leaks—Control Level 1) and 40 CFR part 60, subpart VV (Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry). The others reported using a sensory-program, with most of them conducting inspections monthly. No facilities are capturing all of their equipment leak emissions and venting them through a closed-vent system to a control device. Thus, the MACT floor for existing sources was determined to be a sensory-based LDAR program with monthly inspections of all components. The new source MACT floor was determined to be an LDAR program based on 40 CFR part 63, subpart TT, consistent with the program implemented by the best-performing source.

Comment: One commenter objected to the standard being based on an LDAR program because it is a work practice standard rather than an emission limit. According to the commenter, the CAA requires us to set an emission limit rather than a work practice standard unless it is not feasible to prescribe or enforce an emission limit, and the commenter found no evidence or analysis in the record suggesting that it is infeasible to do so.

Response: We determined that an LDAR program is the most reasonable option for control of leaking components. Unlike other emission sources, leaking components are not deliberate emission sources but rather result from mechanical limitations associated with process piping and machinery. A well-managed facility follows a preventive maintenance program to minimize leaks but in all practicality cannot guarantee that no leaks will occur. Therefore, an emission standard for equipment leaks would be difficult to enforce or prescribe. In order to develop such an option, all processes and equipment containing process piping that could potentially leak would require complete capture and control. While the practice of enclosing components and venting to control is allowed as an alternative to LDAR, it is not practiced except in limited cases.

Comment: Many commenters stated the standard should be based on the MACT floor (*i.e.*, a sensory-based LDAR program). According to the commenters, we assumed leak frequencies and leak rates that are too high and costs that are too low; changing these assumptions will show the regulatory alternative (*i.e.*, an LDAR program requiring monitoring using Method 21) is not cost effective. According to the commenters, the SOCM average factors are not representative of the coatings manufacturing industry because

coatings processes generally use less volatile HAP, operate at lower temperatures and pressures, and all operation is in the liquid phase. The commenters considered coatings process conditions to be similar to those for gasoline distribution facilities, which they noted are required to comply with a sensory-based LDAR program. To support their position that leak frequencies and emission rates for coatings manufacturing processes are low, one commenter provided monitoring data for 13 facilities in the industry, including bagging sample data for a few of the pumps, valves, and connectors at one facility.

Response: We reviewed the leak data submitted by the commenter for 13 facilities, including three facilities from which data was recently collected by a fugitive emissions contractor. The three-facility study was well documented and conducted by the same contractor and using the same monitoring instrument that was calibrated on methane. Data from the remaining ten facilities was not as well documented and in some cases, the monitoring data appear to have been based on various instruments and that were calibrated on compounds other than methane. While these data may have been adequate for the individual facility purposes, we did not consider them in our analysis because we felt these data were not consistently obtained. The commenter also conducted a bagging study at one of the three plants for which screening data was collected. Using the results of the bagging study, the commenter calculated emission factors that are 0.00054 kilograms per hour (kg/hr)-source for valves, 0.0025 kg/hr-source for pumps, and 0.0000422 kg/hr-source for connectors. In developing the emission factors, the commenter essentially took an arithmetic average of the VOC emission rates for all components in the bagging study.

After reviewing the information, we decided to recalculate the emission factors according to the method documented in both American Petroleum Institute (API) and EPA publications ("Development of Fugitive Emission Factors for Petroleum Marketing Terminals," Publication Number 4588, March 1993, Prepared by Radian Corporation for API; and "Protocol for Equipment Leak Emission Estimates," EPA Publication EPA-453/R-95-017, November 1995). Using the bagging study and the corresponding screening data, we developed emission rate equations for pumps, valves, and connectors that relate the VOC emission rate (in kg/hr) to the average screening value (in ppmv) for each component. As

a second step, we used the data from the three-facility screening study to calculate average emission factors. Our analysis resulted in average emission factors of 0.000412 kg/hr-source for valves, 0.0042 kg/hr-source for pumps, and 0.000015 kg/hr-source for connectors. When we applied these emission factors to our model plant that was the basis for the cost analysis, we found that the uncontrolled HAP emissions are 0.70 tpy, versus the 4.03 tpy that was used in the original analysis. For comparison, if we had used the commenter's calculated emission factors, we would have estimated 0.66 tpy HAP, a slightly lower value but well within the same order of magnitude as the factor we developed. In either case, we note that the revised estimate is only about 20 percent of the previous uncontrolled estimate.

We revised our impacts calculation by conservatively assuming that the relative reductions achieved by the MACT floor sensory LDAR program and the regulatory alternative (40 CFR part 63, subpart UU program) would be the same as assumed in prior analyses. For the model facilities, our previous analysis assumed a 29 percent reduction from uncontrolled baseline for the MACT floor and a 62 percent reduction for the subpart UU regulatory alternative. We multiplied the previously estimated nationwide reductions of implementing the MACT floor and the regulatory alternative by the ratio of model facility revised uncontrolled emission over the earlier estimate of uncontrolled emissions, or 0.7/4.03, to obtain revised emissions reductions. We assumed that the capital and total annual cost estimates would be unchanged from the previous analysis. The incremental cost effectiveness of going beyond the floor using this analysis was estimated to be \$15,800, and there are essentially no energy impacts or non-air quality health and environmental impacts associated with the regulatory alternative. Therefore, we cannot justify going beyond the floor in the final rule.

G. Standards for Transfer Operations

Comment: One commenter stated we must set a MACT floor for transfer operations at existing sources. According to the commenter, not setting a MACT floor because no State regulations apply to transfer operations is unlawful.

Response: In setting the MACT floor for existing sources, we considered the available information. We did not specifically request information for transfer operations in our CAA section 114 information request. Based on